

**BY ORDER OF THE COMMANDER
50TH SPACE WING**

50TH SPACE WING INSTRUCTION 10-617

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Operations

**AFSCN PROGRAM REQUIREMENTS
PROCESS**

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This instruction implements Air Force Policy Directive (AFPD) 10-6, *Capabilities-Based Planning & Requirements Development*, and AFPD 16-3, *Priorities for Resources Management*. This instruction defines the Air Force Satellite Control Network (AFSCN) Requirements Process, identifies roles and responsibilities, and establishes the nominal time-lines and associated documentation necessary for requesting and obtaining AFSCN support. For purposes of this instruction, the user agency is defined as any agency requesting support from the AFSCN. It applies to all AFSCN activities at tenant organizations, Schriever AFB (SAFB), Vandenberg AFB (VAFB), Remote Tracking Stations (RTS), AFSCN External Users, and all contractors tasked by this instruction, as stipulated by contract. Each squadron, detachment, organization, section, or operational area may develop supplements to this instruction. Send one copy of each to 22 SOPS/DOK, 401 O'Malley Ave, Suite 51, Schriever AFB, CO 80912-3051. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. Requests for waivers must be submitted through chain of command to the OPR listed above for consideration and approval. The authorities to waive requirements in this publication are identified with a Tier ("T-0, T-1, T-2, T-3") number following the compliance statement. See AFI 33-360, *Publications and Forms Management*, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority. The waiver authority for non-tiered requirements in this publication is 50 SW/CC. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of*

Records, and disposed of IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS).

SUMMARY OF CHANGES

This document is substantially revised and must be completely reviewed. Redundant information and organizational roles and responsibilities have been removed. Numerous higher level publications referenced in earlier versions of this document have been rescinded and are no longer included. Information referring to launch support is now contained in 50SWI 10-1208, *Launch Readiness and Responsibilities*, and has been removed from this document. A large volume of minor administrative changes have been made.

1. General The AFSCN is a common user network comprised of the Network Management, Communications, and Range Segments used to support Launch Vehicles, National Security Space, and Civil and Allied space systems. Prospective AFSCN users (user agencies) submit requests to use AFSCN assets in the form of a Program Requirements Document (PRD). The PRD is created as a result of the user agency and 50 SW/XP coordinating through a requirements definition process. 50 SW, in partnership with the Space and Missile Systems Center Satellite and Launch Control Systems Program Office (SMC/RN) and Headquarters Air Force Space Command (HQ AFSPC) staff offices, analyze user agencies' requirements for operational and engineering supportability. Formal documentation of user agencies' support requirements, and of AFSCN understanding and agreement to meet those requirements, provides the foundation for the process. 50 SW/XP manages all initial Program Requirements for the AFSCN. These requirements include uplink and downlink configuration information, scheduling requirements, communications connectivity requirements, and all other AFSCN related requirements which a satellite program may levy on the AFSCN for mission support. The AFSCN Program Support Manager (PSM) is responsible for oversight of the AFSCN Program Requirements. 50 SW/XP has the final authority to approve access to the AFSCN as submitted in the PRD. 50 SW/XP is responsible to ensure all requirements have been analyzed and addressed before 22 SOPS begins engaging with the user agency for launch and space operations.

2. Requirements Definition Process

2.1. Request for AFSCN Support. Prospective AFSCN users request AFSCN support by contacting the 50 SW Program Planning Branch (50 SW/XPP) and scheduling a program overview. This introductory meeting is designed as an informal exchange of information between the satellite program and the PSM and may be conducted via telecon or in-person meetings. After the appropriate security level has been set and initial program requirements are understood, the PSM provides an informal preliminary assessment regarding the AFSCN's ability to support the user agency's program. The preliminary assessment shall consider whether the user agency's program tracking, telemetry and commanding requirements are compatible with the AFSCN's support capabilities during the user agency's mission timeframe.

2.2. Technical Interchange Meeting (TIM). If the preliminary assessment indicates AFSCN may be capable of supporting the user agency's requirements, a TIM is scheduled between AFSCN and user agency action officers. The TIM is conducted between the user

agency and 50 SW/XP (and other AFSCN agencies as appropriate) to discuss the potential AFSCN support to the user agency.

2.2.1. AFSCN Capabilities. The action officers will discuss current and planned AFSCN capabilities at the TIM, emphasizing on the user agency's timeframe for requested support. Additionally, 50 SW/XP will provide instructions, network documentation, and software user manuals referenced in this document to the user agency's action officer.

2.2.2. User Satellite Operations Center (SOC). If the prospective AFSCN user does not currently have SOC connectivity to the AFSCN, the requirements, processes, and alternative solutions will be discussed at the initial TIM.

2.2.3. Information Assurance. 50 SW/XP will explain the process for requesting and receiving Air Force Space Command (AFSPC) Authority to Connect to the AFSCN to the user agency at the TIM.

2.2.4. PRD Development. Since the PRD is the basis for AFSCN support, the format and content of the PRD is discussed at the TIM and 50 SW/XP will provide a template to the user agency to use to identify its requirements and to develop the necessary documentation.

2.3. Iterative Requirements Process Initiated. An iterative requirements coordination process begins between AFSCN support organizations and the requesting user agency. Recurring process actions include, but are not limited to:

2.3.1. Required Documentation. AFSCN and the user agency agree on the level of program documentation required (e.g., determine if a formal Program Introduction (PI) or Statement of Capability (SC) is needed).

2.3.2. Draft Document Review. User agency requirements documentation is reviewed by the PSM in draft form prior to formal signature, approval, and submittal by the user agency. The focus of this review is to ensure the requirements are complete and that AFSCN agencies understand the requirements.

2.3.3. Document Response. After formal transmittal of the user agency program requirements documentation, the PSM will provide an engineering and operational assessment. The documentation process is described below in Paragraph 3.

2.3.4. Program Meeting Participation. The AFSCN PSM attendance at user agency TIMs and program reviews (e.g. System Design Reviews, Preliminary Design Reviews and Critical Design Reviews) is highly recommended. The exchange of information ensures both the user and the PSM understand the user agency's mission requirements and AFSCN's capabilities.

2.3.5. Identification of Unmet Requirements. The AFSCN PSM coordinates with the user agency government program officer (GPO) and AFSPC/A5 to determine the most cost effective and risk reducing method to satisfy unmet requirements. Technical solutions are assessed and, if necessary, the need for AFSCN baseline changes and funding sources are identified. The AFSCN PSM assists the user agency in preparing and submitting the Change Request Forms (CRFs) for AFSCN baseline changes and

Command, Control, Communication and Computer (C4) requests for communications connectivity, as required.

2.4. Readiness Review. Approximately 45 days prior to the requested AFSCN support date, the user agency GPO and the AFSCN PSM conduct a readiness review. Objectives of the review include assurance of AFSCN support capability, user agency readiness to launch, and coordination of critical activities with 22 SOPS' Scheduling Branch and the 50 SW Information Assurance Office. This review is the initial handoff of the user agency's program from the requirements definition process (managed by the PSM), to a cooperative support from 22 SOPS and the PSM, and then to an operational program on the AFSCN. The objectives of the readiness review are:

2.4.1. Operational Readiness Review. The AFSCN PSM and user agency GPO review completed actions or assign an estimated completion date (ECD) on uncompleted items. For user agencies that are new to the AFSCN, 22 SOPS conducts an Operational Readiness Review to include introductions to operational organizations and tours of supporting areas within the SAFB complex.

2.4.2. Mission Briefing. The user agency provides a Mission Briefing at the Operational Readiness Review, identifying mission objectives and critical support activities. This assists schedulers and priority users in resolving potential AFSCN scheduling conflicts.

3. Requirements Documentation

3.1. Document Description. The AFSCN requirements documentation process is a standardized process providing a common structure to define program requirements within the constraints of approved support architectures. It allows for formal identification of user agency requirements and provides for an AFSCN response on how the requirements will or will not be met.

3.2. Document Organization. Four AFSCN requirement and capability documentation levels are described below.

3.2.1. Program Introduction (PI). The PI provides a top-level, program requirements definition. It is typically required only when changes to the AFSCN baseline are anticipated or long lead-time development activities are required. If deemed appropriate by the AFSCN PSM, a PI is created by the user agency and used as a planning document for AFSCN security analysis and development actions. The PI is signed by the user agency and submitted as early as five years, but not later than three years, prior to the mission need date. This ensures adequate time for the establishment of necessary AFSCN baseline funding and development initiatives.

3.2.2. Statement of Capability. The SC is created by the AFSCN PSM and is the formal response to the PI. It describes how support will be provided and what changes to the AFSCN baseline may be required. The SC provides operational and engineering responses, and is generally finalized within 90 days of receipt of the formal PI. The document is signed by 50 SW/XP and is the initial AFSCN mission support agreement.

3.2.3. Program Requirements Document (PRD). The PRD is created by the user agency and contains specific details on all mission requirements. The PRD provides, but is not limited to, program security issues, information regarding factory and launch base

compatibility testing, command formatting, telemetry rates, link margin analyses, communications routing and services, and required launch, early orbit, on-orbit, and disposal support requirements. The user agency should not specify implementation solutions as a requirement. The PRD is signed by the user agency and nominally submitted 15 months prior to the mission support need date. To aid development of the PRD, the AFSCN PSM is available to meet with the user agency and provide tabletop assistance in developing a draft PRD. Either at, or shortly following, the critical design review is an optimal time for the user agency and the PSM to meet and draft the PRD. The user agency can subsequently coordinate the requirements into the draft PRD and obtain approval signature within the user agency.

3.2.4. Program Support Plan (PSP). The PSP, a formal response to a PRD, is prepared by the AFSCN PSM. It provides an analysis of the AFSCN's ability to meet satellite program requirements and specifies how program requirements will or will not be satisfied. It contains an item-for-item engineering and operational response to PRD requirements. When the document is signed by 50 SW/XP, the PSP becomes the official agreement regarding AFSCN support to the mission. The PSP is generally finalized within 90 days after receipt of the formal, signed PRD. The PSP will be coordinated by SMC/RN (engineering review), 50 Network Operations Group (50 NOG) (operational review), and 22 SOPS (loading review).

3.3. Document Revisions. Changes to the PRD may be formally submitted by the user agency (i.e., transmitted with program office signature) in the form of page changes or a complete document revision. Examples of events that may warrant a revision are extended life of an on-orbit asset, a change in the original AFSCN loading profile (i.e., significant changes in required AFSCN contacts), or a movement or major modification of a SOC. The AFSCN PSM replies (in kind) to new or modified requirements in the corresponding response documents (e.g., PSP). AFSCN response documentation may be reviewed at any time, but at least tri-annually, and may be modified as necessary to reflect changes in system architecture and/or Concept of Operations. All proposed support changes are coordinated with the user agency to minimize or eliminate mission impacts or costs.

4. Essential Activities

4.1. Description: There are several essential activities that must be completed before the user can schedule and perform a contact on the AFSCN. These activities are listed below. While many of these activities are performed in parallel, the order listed here should serve as a guide to prioritize activities. The AFSCN PSM will work closely with the prospective AFSCN user to establish program specific need dates for each individual activity. Upon acceptance of the PSP by the user, the AFSCN PSM initiates all the following processes.

4.2. IRON and Call Sign Assignment. The AFSCN uses IRONs to identify and schedule all space vehicles. The AFSCN use Call Signs to identify the operational SOC who is performing the contact. The call sign and IRON are always unclassified because they are used on the unclassified AFSCN to schedule and perform contacts. However, use of the IRON with other program data may not be unclassified. These instances are described in the Program's Security Classification Guide. Upon receipt of the user agency's PRD, the PSM requests IRONs for the user from 22 SOPS. If it is a new SOC, the Call Sign will be coordinated with 22 SOPS.

4.3. IRON Database Configurations. The AFSCN ground stations must be configured for the space vehicle contact (transmit power, uplink and downlink configurations, data rates, etc). The specific support parameters are provided to the AFSCN ground stations via the space vehicle's IRON Database. These vehicle specific configurations must be developed and tested by the user agency before the launch and operation of the space vehicle. Factory Compatibility Testing (FCT) and Launch Base Compatibility Testing (LBCT) demonstrate and verify the correctness and accuracy of the IRON configurations before launch. The user agency is responsible for keeping these IRON database configurations current. The PSM, SMC/RNL, and 22 SOPS are available to support the user agency in the development and testing of the configurations, but they belong to the user agency. The SMC/RNL maintains and distributes the IRON configuration database.

4.4. Distributed Communication Controller (DCC) Configurations. The DCC is a Personal Computer (PC) based workstation within the SOC used by the space operator to configure the communication circuits between the SOC and the scheduled Remote Tracking Station (RTS). The user agency builds and saves circuit configurations to execute at scheduled contacts. The user agency must also release the communications circuits after the contact is complete. A DCC workstation is currently a user provided PC loaded with AFSCN provided application software and master resource description (MRD) database. Based on program requirements documented in the PRD, the PSM acquires communication ports for new DCCs and coordinates connection to the AFSCN. The user agency is responsible for the DCC connectivity from the SOC to the AFSCN node.

4.5. Electronic Schedule Dissemination (ESD). The ESD system is the heart of the AFSCN because it is used to schedule all contacts and downtimes throughout the network. ESD is used to request satellite contacts, receive conformation of contact request and submit a Mission Impact Report (MIR) should there be an issue with the contact. Prospective AFSCN programs will identify a requirement for a scheduling capability in their PRD, along with the number of terminals required, and provide a justification for the requirement. Upon completion of the PSP, the AFSCN PSM will assist the user agency in development and submission of a Change Request Form (CRF) that will document and initiate the delivery and installation of the terminal in the user agency SOC.

4.6. Information Assurance. Information Assurance (IA) is a Department of Defense (DOD) program with mandatory compliance. DoDI 8510.01, *DoD Information Assurance Certification and Accreditation Process (DIACAP)*, is the controlling document which is supplemented by each military service. AFSPCI 33-202, *Information Assurance (IA)*, is the AFSPC supplement for the AFSCN IA process. The AFSPC Designated Approving Authority (DAA) is the AFSPC/CC who has delegated the AFSCN DAA to AFSPC/A6. The AFSCN PSM will act as an intermediary between the program and AFSPC/A6 to assist in obtaining Authority to Connect, but the responsibility for completing the task lies entirely with the user agency.

4.7. Compatibility Testing. Compatibility testing prior to launch is the only means to demonstrate successful test of the RTS and Automated Remote Tracking Station (ARTS)/RBC database compatibility with the AFSCN. To ensure successful operations, LBCT is available at AFSCN supported launch facilities. Factory Compatibility Testing (FCT) is highly recommended.

4.7.1. Factory Compatibility Testing. FCT utilizes transportable AFSCN equipment deployed to the factory and is conducted early in the development of the space vehicle. The Space and Missile Systems Center (SMC) provides this service using the Transportable Space Test and Evaluation Resource (TSTR) and/or the Transportable RTS Block Change (RBC). Scheduling the use of these assets is coordinated by the program office directly with SMC. The cost of transportable equipment use, and communication connectivity costs to link the on-orbit C2 system (i.e., SOC/MOC), is the responsibility of the user agency.

4.7.2. Launch Base Compatibility Testing. The LBCT demonstrates the correctness and accuracy of the space vehicle's IRON configuration and the correct implementation of communications before launch. LBCT utilizes AFSCN Automated Remote Tracking Station (ARTS)/RBC ground systems at the Eastern Range (ER) or Western Range (WR) to demonstrate space vehicle compatibility before launch. AFSCN ground systems at the ER or WR are provided at no charge. For non-ER or -WR launches (e.g., Wallops Flight Facility, Kodiak Launch Complex, and the Reagan Test Site at Kwajalein) use of AFSCN deployable assets (similar to FCT) is the recommended support method. Use cost, shipping costs, and associated communications is the responsibility of the user agency.

4.8. Test Planning and Execution. Compatibility test planning and execution is the responsibility of the user agency. Technical assistance is available from the supporting Command and Control (C2) (SOC/MOC) and if requested, the AFSCN PSM and 22 SOPS. The AFSCN PSM and 22 SOPS can assist by reviewing the Test Plan, Test Procedures, or Test Execution. The program office is responsible for a Final Test Report. Upon test completion, the program office provides a copy of the test report to the AFSCN PSM.

4.9. External Communications Connectivity. External connectivity to the AFSCN Communication Segment at the network Operational Control Nodes (OCN) is the responsibility of the mission System Program Office (SPO), through its Defense Information Systems Agency (DISA) Circuit Control Officer (CCO). The AFSCN PSM assists in identifying the CCO and providing the demarcation details. The external connectivity provided by DISA is terminated at the established DISA demark at the OCN. The AFSCN PSM assists the user agency in extending the connectivity from the DISA demark to the AFSCN Communication Segment or user agency SOC. 50 SW/XPP can submit the requirement to the local communications organization through the Work Order Management System (WOMS), if the user does not have access.

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Commander

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

DoDI 8510.01, *DoD Information Assurance Certification and Accreditation Process (DIACAP)*, 28 November 2007

AFPD 10-6, *Capabilities-Based Planning & Requirements Development*, 31 May 2006

AFPD 16-3, *Priorities for Resources Management*, 26 January 1994

AFMAN 33-363, *Management of Records*, 01 March 2008

AFI 33-364, *Records Disposition-Procedures and Responsibilities*, 22 December 2006

AFSPCI 33-202, *Information Assurance*, 15 January 2009

50SWI 10-1208, *Launch Readiness and Responsibilities*, 11 September 2012

Adopted Form

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

21 SOPS—21st Space Operations Squadron

22 SOPS—22nd Space Operations Squadron

50 SCS—Satellite Communications Squadron

50 NOG—50 Network Operations Group

50 SW/XP—50 Space Wing Plans and Programs Office

50 SW/XPP—50 SW Program Planning Branch

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFPD—Air Force Policy Directive

AFSCN—Air Force Satellite Control Network

AFSPC—Air Force Space Command

AFSPCI—AFSPC Instruction

ARTS—Automated Remote Tracking Station

ATC—Authority-to-Connect

C2—Command and Control

C4—Command, Control, Communication and Computer

CC—Commander

CCO—Circuit Control Officer

COMSEC—Communication Security
CRF—Change Request Form
CS—Communication Segment
CTO—Certificate To Operate (Ref. AFSCN Operations)
DAA—Designated Approving Authority
DCC—Distributed Communication Controller
DISA—Defense Information System Agency DoD - Department of Defense
DO—Director of Operations
DRSN—Defense Red Switch Network
ECD—Estimated Completion Date
ECP—Estimated Completion Date
EFTO—Encrypt For Transmission Only
ER—Eastern Range
ESD—Electronic Schedule Dissemination
EVCF—Eastern Vehicle Checkout Facility
FCT—Factory Compatibility Test
GPO—Government Program Officer
HQ—Headquarters
IA—Information Assurance
IDCR—IRON Database Change Request
IRON—Inter Range Operations Number
L-X—Launch minus _ Days
LBCT—Launch Base Compatibility Test
MCC—Mission Control Center
MIR—Mission Impact Report
MOC—Mission Operations center
MRD—Master Resource Description
MUE—Mission Unique Equipment
OAFS—Onizuka Air Force Station
OCN—Operational Control Node
OD—Operations Directive
OPR—Office of Primary Responsibility

OPS—Operations
ORL—Operational Requirements Letter
OSR—Operational Switch Replacement
PAP—Program Action Plan
PDO—Publishing Distribution Office
PI—Program Introduction
POM—Program Objective Memorandum
PRD—Program Requirements Document
PSM—Program Support Manager
PSP—Program Support Plan
RBC—RTS Block Change
RTS—Remote Tracking Station
SAFB—Schriever Air Force Base
SAGES—Satellite and Ground Environment Simulation
SARM—Set Asynchronous Response Mode
SC—Statement of Capability
SMC—Space and Missile Systems Center
SOC—Satellite Operations Center
SPO—System Program Office
SV—Space Vehicle
SVOD—Space Vehicle Operations Director
SWI—Space Wing Instruction
TIM—Technical Interchange Meeting
VF—Vehicle Folder
WANIU—Wide Area Network Interface Unit
WEBDART—Web-Based Data Analysis and Repository
WOMS—Work Order Management System
WR—Western Range